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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/997,219	12/23/1997	MOTOHIRO YAMAHARA	47964	1038

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EXAMINER	
PARKER, KENNETH	
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2871	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 08/997,219	Applicant(s) Yamahara
	Examiner Kenneth Parker	Art Unit 2871

-- The MAILING DATE of this communication appears on the cover sh et with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *Jun 28, 2001* .

2a)☐ This action is **FINAL.** 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-47* is/are pending in the application.

4a) Of the above, claim(s) *15-28, 30, and 38-47* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14, 29, and 31-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a)☒ All b)☐ Some* c)☐ None of:

1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15)☒ Notice of References Cited (PTO-892)
16)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
18)☐ Interview Summary (PTO-413) Paper No(s). _____
19)☐ Notice of Informal Patent Application (PTO-152)
20)☐ Other:

DETAILED ACTION

New references found have indicated that the claimed dispersion levels were those of the conventionally employed prior art. This would employ either all of the devices of the prior art achieved the claimed result of no viewing angle dependent coloration, or that the specification itself is not enabling. As applicant has argued that the device of the previous rejections did not achieve the result, the rejection under 112 first paragraph which was previously only breadth of enablement has been extended to include a lack of enablement rejection in addition to the breadth of enablement issue.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-14, 29 and 31-37 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The statement "*the refractive index anisotropy is specified to vary with wavelengths of rays of light within a range that allows no viewing angle dependent coloration to occur on a displayed image*" can be interpreted several ways, listed as follows:

1) the "set in a range specifically refers to the particular refractive indexes which applicant indicates as causing this function, what they have disclosed as essentially higher than normal dispersion (shown in figure 5)

2) any way of using the any device achieving the goal taught through only the compensator and the index. This would include the method taught by Wu of using a high dispersion compensator to match the LC material, and any others that may come along in the future (this interpretation has no other features or elements used to achieve the result- the result comes from any selection of the index which with the compensator alone achieves this result.

3) The result is achieved by any means (possibly with any of an enormous number of techniques unrelated to those disclosed by applicant, including the dozens of multidomain techniques, the use of projectors, the use of collimation). Here the mere presence of dispersion and the end result are all that is required to meet the limitation.

In the examination of this application, the second interpretation is has assumed. It has also been assumed that applicant's invention worked by a heightened mismatch of the dispersion, as opposed to matching the dispersion as typically done with the prior art devices (applicant specification does not say this, in fact applicants specification leaves out the relationship of the dispersion of the LC to that of the compensators). The specification indicated improved behavior

for higher dispersion and as most of the birefringent plates have lower dispersion compared to the liquid crystal (which was considered to be a problem the prior art tried to avoid) the mismatch was somehow what applicant used to get the good result. Unfortunately, it has turned out that the values of dispersion disclosed by applicant as being the high dispersion liquid crystal materials are the same range as that disclosed by Wu as typical. This has opened up the question as to wether the result is it is inherent to prior art devices such as Mori, or wether the current specification is enabling. As applicant has argued that the prior art devices do not achieve the result, then the current specification is not enabling. Additionally, there were methods of achieving the result (the Wu reference clearly teaches this) by matching of the refractive indexes, however this method appears to be taught away from in the current specification. Additionally, if the result is not inherently met by the prior art devices, then applicant's specification fails to communicate any method as it gives no more details then that of the prior art.

Further, the claims if even considered enabling for the devices disclosed in the specification as high dispersion, the disclosure still does not teach how to make the refractive index anisotropy to be specified to a range that allows no viewing angle dependent coloration to occur on the liquid crystal screen in all possible manners. Additionally, it does not enable the myriad of methods employing multidomain, collimation and other techniques, and therefore the claims would be broader than the enablement.

Please note that all interpretations have the first paragraph lack of enablement problem. Only the second and third interpretation have the breadth of enablement problem (assuming enablement of any embodiment was met).

Claim Rejections - 35 USC § 103

1. Claims 1-14, 29, 31-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al, US Patent # 5,559,618 in view of Wu, Wu, Bosma et al, Nishimura et al and Herke.

Mori discloses a liquid crystal device with a compensator having nx>nz>ny and nz inclined, discotic liquid crystal, however does not discuss the dispersion of the refractive index. and that the result of the matching is that the compensation achieves the result claimed. Please note that where a reference differs only in the functional aspect, the patent office has a reduced burden as it is prima facie that the claimed inventions are the same. Here, the structure is all present, and only the function is missing, so the burden is upon applicant to show that the function is not anticipated by the reference and that it is non-obvious.

Please note that the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA

1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)). See MPEP 2113.

Further, the secondary references actually evidence that the details of the dispersion and index of refraction claimed and discussed in the specification were what were in the past employed and therefore were in fact inherent (as it states that the claimed levels were the normal).

The references also that the goal of proper of axis color behavior was known to be desirable (which has the same meaning as "no viewing angle related coloring", Wu SID '95), and show a method of accomplishing the goal by setting the compensator to have a higher dispersion, and therefore to match the liquid crystal at all angles. Therefore it would have been obvious, to achieve proper off axis color behavior, and to do so by having the dispersion characteristics matched as taught by Wu as desirable. Please note that all of the secondary references teach the matching of the dispersion, showing that it was actually well known at the time.

The limitations of the refractive index and the index of dispersions were the conventional values as evidenced by the secondary references and applicant's own specifications description of the prior art (the prior art dispersion values). Please note the chart in Bosma et al showing various dispersions and Wu (both references) show that the dispersion ration of the liquid crystal over 450 to 650 is some where between .15 and .25 or so of the birefringence, which was typically about .070.(Wu Materials chemicals and Physics gives examples of 0.074 and .1, and shows a material as a conventional example, ZLI-2857, which has a delta n of .072 at 627 angstroms, and which can be seen from it's dispersion chart as having values of about .080 at 550

and about .092 at 450. This puts the claimed range simply in the norm of what was used at the time. Therefore it would have been obvious (or inherent), to use devices which met applicant's limitations of dispersion and birefringence because it the properties result from the use of materials which were conventional at the time. The use of the conventional materials is obvious as they were widely commercially available for the purposes of making the standard display cells.

Additionally, the charts for the dispersions of conventional material of the secondary references appear to match closer to applicants description for the "high dispersion materials" when the numbers are plugged in to make the units match, further indicated a non-patentable distinction from the prior art.

Still lacking from some of the claims are the liquid crystal being discotic or hybrid aligned. These were well known for enabling the compensator to more closely resemble the structure of the liquid crystal and therefore give better compensation, and would have been obvious for that reason.

Response to Arguments

Applicant's arguments filed have been fully considered but they are not persuasive. Applicant argues that the language that "it appears very likely that" is an indication that the property is not inherent. However, please note that with inherency arguments, or where a reference differs only in a characteristic or function and has the claimed structures, the burden

shifts to applicant to show that the characteristic is novel and nonobvious. Applicant has made no showing at all in this regard and therefore has clearly not met this burden. Wu teaches quite clearly that the matching of the compensator dispersion to that of the LC material enables "proper angle color behavior". Also, please note, that applicant's claim indicates that the refractive index anisotropy is specified to a range that allows no viewing angle dependent coloration to occur on the liquid crystal screen. Further, as applicants ranges of the anisotropy and dispersion (at least those claimed) turn out to be simply the conventional values, then this property should be inherent to the prior art devices or there would be a problem regarding the enablement if in fact the prior art devices did not teach method of providing other ways of increasing the viewing angle which can "fill the gap" and enable prior art devices to achieve this desired result.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Parker whose telephone number is (703) 305-6202. The fax phone number for this Group is (703) 308-7722. Any inquiry of a general nature or relating to the status of this application or preceding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

April 12, 2002

KENNETH ALLEN PARKER
PATENT EXAMINER
GAU 2871